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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,061	11/02/2001	Coen Theodorus Hubertus Fransiscus Liedenbaum	NL 000590	4835

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EXAMINER

WU, XIAO MIN

ART UNIT PAPER NUMBER

2674

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/003,061

Applicant(s)

LIEDENBAUM, COEN
THEODORUS HUBERTUS FRA

Examiner

XIAO M. WU

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 0200.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 4-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitation of "photoluminescent material" is not described in the specification. The specification only describes a thin layer 7 of fluorescent material, e.g. fluorescent polymer, a dye or an inorganic compound like a phosphor, and a source for generating electromagnetic radiation, here for example a UV source 11, is used to induce excitations, so called excitations, in the layer 7 of fluorescent material (see page,1, line 26 to page 4). The specification does not describe the fluorescent material is a photoluminescent material.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2-3, 6,7, 14-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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As to claim 3, Martel discloses that the means for generating electromagnetic radiation are comprised in the display device. For example, the ultra-violet light source 24 is part of the elements of the display device as shown in Fig. 1.

As to claim 4, Martel discloses the excitation means comprises means for generating an electric field to the (col. 1, lines 68-71).

As to claim 5, Martel discloses the modulation means (22) comprises means for generating an electric field to the photoluminescent material (14, 16).

As to claim 6, Martel discloses the pixel elements further comprises electrodes (12, 18) which are provided to the photoluminescent material (14, 16), the electric field being generated by applying a voltage to the electrodes.

As to claim 7, Martel discloses the electrodes (12, 18) are transparent electrodes.

As to claim 10, Martel further disclose means for controlling the excitation means (e.g. controlling the light source, see col. 6, lines 38-45), and means for controlling the modulation means in response to a display signal applied to the display apparatus (e.g. the power source 22 can be turned on and off and the excited image on the electro luminescent layer will reappear, see col. 4, lines 62-73).

As to claim 11, Martel discloses the photoluminescent material comprises phosphor (col. 3, lines 67).

As to claim 12, Martel discloses a pair of electrode (12, 18) disposed opposite sides of the photoluminescent material (14, 16); and means for impressing an electric field (22) across the pair of electrodes.

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As to claim 14, Martel discloses a pair of electrode (12, 18) disposed opposite sides of the luminescent material (14, 16); and means for impressing an electric field (22) across the pair of electrodes.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8, 9 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martel (US Patent No. 3,344,280).

As to claims 8 and 9, it is noted that Martel does not specifically disclose what is the thickness of a layer of luminescent material and what is the electric field strength applied to the electrodes. However, the thickness of the layer of luminescent material and the electric field strength are considered as an obvious design choice since the impendence of the luminescent material are varied based on the thickness and the electric field. Therefore, a proper thickness and electric field can be selected based on what kind of the compound of the luminescent material is used.

As to claim 13, 15, 16, it is noted that Martel does not specifically disclose the light source is a light emitting diode. However, it would have been obvious to one of ordinary skill in

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As to claim 2, lines 1-2, the recitation of "A display device A display device" is indefinite.

Claims 3 and 14-17 are indefinite since they depend from claim 2.

As to claim 6, it is not clear what claim 6 is depending on.

Claim 7 is indefinite since it depends from claim 6.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-7, 10-12, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Martel (US Patent No. 3,344,280).

As to claim 1, Martel discloses a display device (Fig. 1) having pixel elements (e.g. each point on the electro luminescent layers (14 and 16) comprising a photoluminescent material (14, 16) for emitting light when excited by excitation means (24), each one of the pixel elements being provided with modulating means (12, 18, 22) for modulating an emission of light by the photoluminescent material (col. 2, lines 1-8; col. 4, lines 27-48).

As to claim 2, Martel discloses a display device having pixels elements comprising a luminescent material (14, 16) for emitting light when excited by means for the excitation means (24), each one of the pixel element being provided modulating means (22) for modulating an emission of light by the luminescent material.

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the art the have used a light emitting diode as a light source since the LED is one kind of light source and can generating the same electromagnetic radiation.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martel (US Patent No. 3,344,280) as applied to claim 2 above, and further in view of Zhang et al. (US Patent No. 5,798,170).

As to claim 17, it is noted that Martel does not specifically disclose that the luminescent material comprises a poly phenylene Vinylene (PPV) derivative. However, using a poly phenylene Vinylene (PPV) derivative as the luminescent material is well known in the art such as taught by Zhang (col. 7, lines 8-11). It would have been obvious to one of ordinary skill in the art to have modified Martel with the features of the PPV as taught by Zhang because the PPV material can perform the same function as the luminescent material.

Response to Arguments

10. Applicant's arguments filed 7/9/2003 have been fully considered but they are not persuasive.

With respect to claim 1, applicant argues that Martel does not teach that the element 12, 18 and 22 modulate an emission of light by the phosphorescent layer 16. Applicant's arguments are not persuasive because the luminescent material of Martel includes phosphorescent material and electroluminescent material and the light emitted from these materials are modulated by the voltage source 22.

With respect to claim 2, applicant argues that Martel does not disclose that each of the pixel elements is provided with modulating means for modulating an emission of light by the luminescent material. This argument is not persuasive because Martel discloses that both layers

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14 and 16 are luminescent material and they are modulated by the light source 24 and the voltage source 22.

With respect to claim 5, Martel clearly discloses that the voltage is applied across the photoluminescent material 16 and electroluminescent material 14.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiao Wu whose telephone number is (703) 305-4721.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709.

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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington.

VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377

xw

September 21, 2003


XIAO WU
PRIMARY EXAMINER
ART UNIT 2674